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Review Lead: Lead Infection Prevention & Control Nurse

Section D - Meningococcal Infection

Version 9

Important: This document can only be considered valid when viewed on the Trust's Intranet. If this document has been printed or saved to another location, you must check that the version number on your copy matches that of the document online.

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Document Version Control		
Version 9	Checked and updated current guidance, including definitions of cases, contacts, and adding a section for the management of contacts in the hospital. The policy in brief has been moved to the appendices.	
Version 8	Amendment made to mask use for aerosol generating procedures.	
Version 7	Updated Name of Proper Officer Updated link to Notifiable Diseases Policy. Symptoms added.	
Version 6	Amendment to section 12 – Chemoprophylaxis updated to latest prescribing information. All contact numbers updated.	
Version 5	Amendment April 2014 Section 7 - Admission management and mask use has been updated to reflect current guidance	
Version 4	Includes reference to the updated Health Protection Agency Guidance for the Public Health Management of Meningococcal Disease (updated March 2012)	

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1. Introduction

Neisseria meningitidis (meningococcus) is a cause of bacterial meningitis and septicaemia, an infection of the surface of the brain (meninges). Most invasive meningococcal infections in the UK are currently caused by the group B strain although group W strains are becoming more prevalent. In children and young people aged 3 months or older, the most frequent causes of bacterial meningitis include meningococcus, *Streptococcus pneumoniae* (pneumococcus) and *Haemophilus influenzae* type b (Hib). These organisms can occur normally in the upper respiratory tract without causing infection but can cause invasive disease.

Humans are the only known reservoir for the meningococcus bacterium. Around 10% of the population carries the meningococcus in the back of their throat or nose without causing any illness. It is transmitted from person to person by inhaling respiratory secretions from the mouth and throat or by direct contact (kissing). Close and prolonged contact is usually needed for transmission. Many people recover without complications, however: 10% of cases are fatal and long-term complications include loss of limbs, hearing loss, loss of sight, memory problems, and balance problems

Recommendations within this policy have been made in conjunction with Public Health England (PHE) 'Guidance for Public Health Management of Meningococcal Disease in the UK (PHE 2019) and NICE Guidance 2015.

1.1 Key points

Meningococcal disease can cause meningitis or septicaemia. It is a very serious infection that requires an immediate response, including:

- Give IM or IV benzylpenicillin at the earliest opportunity
- Rapid transfer to hospital irrespective of whether antibiotics given or not.
- Isolation under respiratory precautions until 24hrs of appropriate antibiotics with clinical improvement seen
- Staff with an exposure of their mouth/nose directly to large particle droplets/secretions from the patient's respiratory tract are to report to occupational health

2. Purpose and Recommendations

The purpose of this policy is to provide CHFT staff with comprehensive guidance and recommendations for the control of meningococcal disease in conjunction with PHE and NICE guidance (2015).

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3. Definitions

PHE – Public Health England

CCDC – Consultant in Communicable Diseases

IPCN – Infection Prevention and Control Nurse

PCR – Polymerase chain reaction

CSF – Cerebrospinal fluid

4. Duties (Roles and responsibilities)

The Chief Executive is responsible for ensuring that there are effective infection control arrangements in the Trust.

Public Health England is responsible for ensuring adequate disease prevention, surveillance programmes and the prevention of secondary spread.

- Following notification, PHE will ascertain case contacts, give advice/information and ensure they receive prophylaxis.
- PHE will inform appropriate community staff as required and ensure further follow up in schools or nurseries is completed as necessary.
- PHE will offer support as required.

Infection Prevention and Control Team including Medical Microbiologists are responsible for advice and support to clinical and support staff involved in the management of a case of meningococcal infection and for maintaining this policy

Area managers and ward staff are responsible for their own practice, keeping up to date with IPC training and being aware of and following the content of this policy.

5. Symptoms and case definition

Symptoms can develop within hours. Someone with the disease will become very ill, though not all the symptoms will occur at once. In children and adults' symptoms can include:

Sudden onset of high fever, a severe headache, photophobia, vomiting, painful joints, fitting, drowsiness that can deteriorate into a coma

Symptoms are harder to identify in babies but include:

- a fever while the hands and feet are cold
- high pitched moaning or whimpering
- blank staring, inactivity, hard to wake up

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- poor feeding
- neck retraction with arching of the back
- pale and blotchy complexion
- septicaemia if the bacteria enter the bloodstream. A characteristic rash develops and may start as a cluster of pinprick blood spots under the skin, spreading to form bruises under the skin. The rash can appear anywhere on the body. It can be distinguished from other rashes by the fact that it does not fade when pressed under the bottom of a glass (the tumbler test).

5.1 Case Definition

In order to ensure the appropriate public health action is taken it is essential to define the case. Please refer to page 18 within the [PHE national guidance \(2019\)](#)

Confirmed case:

Clinical diagnosis of meningitis, septicaemia or other invasive disease (e.g. orbital cellulitis, septic arthritis) **AND** at least one of:

- Neisseria meningitidis isolated from a normally sterile site
- gram negative diplococci identified in a normally sterile site
- meningococcal DNA in a normally sterile site
- meningococcal antigen in blood, CSF or urine

Although not meeting the definition of a confirmed case, meningococcal infection of the conjunctiva is considered an indication for public health action (i.e. treatment for the case and antibiotic prophylaxis for close contacts, but not vaccination) because of the high immediate risk of invasive disease.

Probable case

- clinical diagnosis of meningitis or septicaemia or other invasive disease where an experienced member of the Health Protection Team, in consultation with the physician and/or microbiologist, considers that meningococcal infection is the most likely diagnosis
- in cases of meningitis or septicaemia with clinical and laboratory evidence of bacterial infection but where the causative pathogen is not known, meningococcal disease should be considered in the differential diagnosis, especially in previously healthy children and young adults; where Neisseria meningitidis could be responsible and there is no alternative diagnosis at that time, the case should be considered as “probable”

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6. Pre-Admission Management of suspected bacterial meningitis and meningococcal septicaemia

It is vital that healthcare staff transfer anyone with suspected bacterial meningitis or suspected meningococcal septicaemia to secondary care as an emergency by telephoning 999 (NICE Guidance, 2015).

7. Hospital Admission Management

The following action is indicated for confirmed or strongly suspected cases of meningococcal meningitis or meningococcal septicemia (see check list on the intranet and at appendix 1)

7.1 Immediate dose of iv/im benzylpenicillin (NICE 2015)

- Adults and children aged 10 years or over 1.2 g
- Children aged 1 to 9 years 600 mg
- Children aged under 1 year 300 mg

7.2 Take appropriate diagnostic specimens (PHE 2019)

The following specimens should be collected on admission to hospital from all patients when Meningococcal infection is included in the differential diagnosis:

- Blood for culture
- Blood for PCR
- CSF for microscopy, culture, PCR.
- Aspirate from other sterile sites suspected of being infected (e.g. joints) for microscopy, culture, PCR
- Nasopharyngeal (throat) swab normally taken through the mouth
- Lumbar puncture should not be done where contraindicated and should be delayed until the patient's condition has been stabilised and assessment made to rule out raised intracranial pressure. Where the patient has meningococcal sepsis as opposed to meningitis, lumbar puncture is not necessary.

NB Where appropriate, specimens should be taken to check for alternative diagnoses e.g. nasopharyngeal swabs and stool for viral culture.

Cases due to rare serogroups or recurrent infection

In children and young adults with meningococcal disease caused by rare serogroups or recurrent infection due to any serogroup, the CCDC should discuss immunological investigation with the physician.

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7.3 Isolate:

Follow respiratory precautions for a minimum of 24 hours after commencement of appropriate antibiotic therapy. Non-bacteraemia meningococcal pneumonia may carry a small risk of transmission especially in immunocompromised.

- **A surgical face mask** should be worn by HCW's for all activity within 1 metre of the patient (on entering the room) in the first 24 hours of appropriate systemic antibiotics, as the patient is potentially infectious within this time. The use of a closed suction system is also recommended.

7.4 Communicate:

Notify the proper officer of the local authority urgently on suspicion of meningitis or meningococcal septicaemia, by calling PHE on 0113 3860300 (Out of hours 0114 3049843).

Inform a consultant microbiologist during daytime hours. If clinical advice is required out of hours, please contact the consultant microbiologist via switchboard.

8. Contacts: Definition and Chemoprophylaxis (PHE 2019)

Chemoprophylaxis should be issued to contacts of a case. Although the risk to contacts is low, the highest risk is to people who live in the same household. Chemoprophylaxis will not halt incubating disease but aims to reduce the risk of invasive disease by eradicating carriage in the group of close contacts at highest risk. It may act in 2 ways:

- By eradicating carriage from established carriers who pose a risk of infection to others (onward transmission).
- By eradicating carriage in those who have newly acquired the invasive strain and who may themselves be at risk.

Contacts are addressed in two categories: Household and staff.

8.1 Household contacts are: those living in the same household, plus any close contact 'partner' outside the household.

Where the index case is a child, the parents/siblings may be prescribed chemoprophylaxis by the ward (outpatient prescription) where appropriate. If this is not appropriate, they must be directed to attend their GP.

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For adults, where a family member is staying with the index case the ward can also prescribe chemoprophylaxis (outpatient prescription) for the family member. Other household contacts are to be directed to attend their GP.

8.2 Staff contacts are: those who have had exposure of their mouth/nose directly to large particle droplets/secretions from the patient's respiratory tract during acute illness until 24 hours of systemic antibiotics have been completed.

Exposure of the eyes to respiratory droplets is not considered an indication for prophylaxis, though staff should seek early treatment if conjunctivitis should develop within ten days of exposure.

Contact identification is the responsibility of the ward manager/nurse in charge with support from occupational health. Chemoprophylaxis should be given **within 12 hours of exposure**. The doctor responsible for the patient should issue the prescription (outpatient prescription), after discussion with the Consultant Microbiologist. Ciprofloxacin 500 mg as a single dose is the preferred drug for chemoprophylaxis. (Appendix 3).

8.3 Prescribing: Detailed prescribing information is available in the BNF or via medicines information on telephone (15) 4356. Also www.medicines.org.uk.

8.4 Documentation and retention of contact details: Complete and retain the contact information sheet (Appendix 2). **These details need to be forwarded to PHE via a secure email – phe.yorkshirehumber@nhs.net (all lower case)**. Then send this contact form to occupational health.

There may be occasions where PHE or identified Community staff need to know the details of contacts of a case. There should be no hindrance to the necessary sharing of information. In the event of any doubt contact the following via the hospital switchboard:

- PHE via out-of-hours service 0114 3049843
- Consultant Microbiologist out-of-hours service

9. Training and Implementation

This policy will be available on the Trust Intranet and communicated through existing clinical forums and divisions. Staff awareness will be raised during infection prevention and control training events/updates (all clinical staff including medical staff) and via the Infection Prevention and Control Link Practitioner System.

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10. Trust Equalities Statement

Calderdale and Huddersfield NHS Foundation Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at a disadvantage compared to others. We therefore aim to ensure that in both employment and services no individual is discriminated against by reason of their gender, race, disability, age, sexual orientation, religion or religious/philosophical belief, marital status or civil partnership.

This policy has been through the Trust's EQUIP (Equality Impact Assessment Process) to assess the effects that it is likely to have on people from different protected groups, as defined in the Equality Act 2010.

11. Useful Contacts and References

Public Health England:	0113 3860300 (Duty professional line)
Public Health England On Call:	0114 3049843
Meningitis Now	08088010388 (help desk)
Meningitis Research Foundation	08088003344
Medicines Information:	BNF for Children www.medicines.org.uk

[Guidance for Public Health management of Meningococcal Disease in the UK. Health Protection Agency 2019:](#)

[Immunisation against Infectious Diseases. DH/PHE \(2016\)](#)

[Meningitis \(bacterial\) and meningococcal septicaemia in under 16s: recognition, diagnosis and management. NICE Guidance \(2015\)](#)

www.meningitis.org

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APPENDIX 1

CHECK LIST FOR SUSPECTED/CONFIRMED MENINGOCOCCAL INFECTION

NAME OF PATIENT..... D.O.B.....

HOSPITAL NO.....HOSPITAL..... WARD.....

DETAILS	TIME, DATE, INITIALS	COMMENTS
The patient has: - Suspected Meningococcal Infection? - Confirmed Meningococcal Infection?		
Patient has commenced appropriate antibiotics.		
Appropriate diagnostic procedures have been undertaken (tick all that apply):		
Blood culture		
Blood for PCR (EDTA or other unclotted blood sample).		
CSF for microscopy, culture and PCR		
Aspirate from other sterile sites suspected of being infected (e.g. Joints) For microscopy, culture and PCR		
Nasopharyngeal swab (normally taken through the mouth when there is a possibility the patient is linked to other known cases whether confirmed or not)		
Where appropriate – specimens should be taken for alternative diagnoses e.g. nasopharyngeal swabs and stool for viral culture		
PHE (0113 3860300) (out of hours 0114 3049843). <i>NB. It is not necessary to call during the night unless advice is required. Cases during the night can be reported the following morning. However cases should be notified at weekends & Bank Holidays.</i>		

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DETAILS	TIME, DATE, INITIALS	COMMENTS
Consultant Microbiologist informed. (On-call out of hours) via switchboard. <i>NB. It is not necessary to call the microbiologist during the night unless clinical advice is required.</i>		
Infection Prevention & Control team informed (during day time hours or message left on answer phone).		
List of close contacts obtained and contact forms completed (appendix 2). Permission given to inform the school/nursery involved?		
The decision has been made to: 1. Give chemoprophylaxis to contacts 2. Not give chemoprophylaxis to contacts		
This decision has been made by: 1. PHE 2. Consultant Microbiologist 3. Medical Doctor		
The Medical Doctor has completed Out Patient Prescription for contacts. Please record the doctor's name here		
Prescription taken to pharmacy		
Prescription collected from pharmacy		
Prescription and information given to contacts		
Contact sheet completed for PHE (Appendix 2)		

POLICY IN BRIEF – MENINGOCOCCAL MANAGEMENT UI
 Key Ref:

KEY POINTS

Meningococcal disease can cause meningitis or septicaemia. It is a very serious infection that requires an immediate response, including:

- o Give IM or IV **benzylpenicillin** at the earliest opportunity
- o Rapid transfer to hospital irrespective of whether antibiotics given or not.

Many people recover without complications, however: 10% of cases are fatal and long term complications include loss of limbs, hearing loss, loss of sight, memory problems, balance problems

URGENT
 intramuscular or intravenous **benzylpenicillin**
 UNLESS THERE IS A CLEAR HISTORY OF ANAPHYLAXIS FOLLOWING A PREVIOUS DOSE

DO NOT DELAY

MANAGEMENT OF A CASE – INFECTION CONTROL

The patient will be an infection risk for the initial 24hrs of correct antibiotic treatment.

- Isolate - for the initial 24hours of antibiotic therapy
- Keep the door closed – use a respiratory precautions sign
- Wear a surgical mask - on entering the room and for general cares
- Wear a surgical mask and eye protection – for all aerosol producing procedures e.g. Intubation and related procedures, CPR, bronchoscopy, NIV and sputum induction
- Remove gloves and apron and dispose into orange waste stream (NOTE: goggles are reusable and must be cleaned on removal.
- Remove face mask once out of the isolation room. Dispose of the mask into orange waste bag OR decontaminate the reusable mask

CLOSE CONTACTS - prophylaxis

Close contacts include immediate household and partner/significant other. They will require prophylaxis to eradicate throat carriage of the organism. For contacts present in the hospital with the patient, this can be agreed and prescribed by the team managing the patient. Keep a record of the contacts (page 13). The individuals GPs need to be notified to add to individuals records in case of incubating illness or side effects. If not provided by the hospital, or contacts are in the wider community, Public Health England will lead.

MANAGEMENT OF A CASE – SPECIMENS AND NOTIFICATION

The following should be collected on admission from all patients when Meningococcal infection is included in the differential diagnosis:

- Blood for culture; Blood for PCR
- CSF and aspirate from sterile sites suspected of being infected (e.g. joints) for microscopy, culture, PCR.
- Lumbar puncture should not be done if contraindicated and delayed until the patient is stabilised and raised intracranial pressure ruled out. Where the patient has sepsis and not meningitis, lumbar puncture is not necessary.

Meningococcal disease is notifiable – please ensure the case is notified to PHE by telephone ASAP on 0113 3860300 during office hours or 0114 3049843 out-of-hours.

SYMPTOMS



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